FITTING TOOL SET

BETEX IMPACT 33

For safe, precise and quick mounting of bearings, bushings, sealing rings, cam wheels and pulleys the use of an Impact fitting tool set is an absolute necessity.

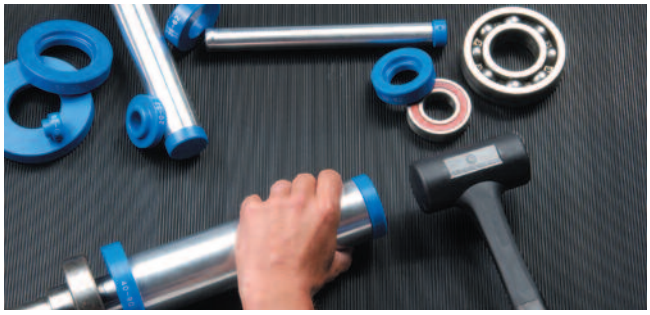
Specially for bearings it is important that during mechanical mounting the bearing is supported on its inner and outer ring in order to avoid unnecessary damage and premature failure.

In this way mounting forces are not transmitted via balls or rollers of the bearings and hence the raceways are not damaged.

IMPACT 33
- with 33 rings, suitable for ± 375 bearings.

Part No.: TB-FT399900-2

Your benefits:
- **Quick, precise and safe mounting**
- **No more damage to shafts, bearing houses or sealing rings**
- **Extended life cycle of bearings**
- **The impact resistant plastic collets are made of unbreakable sheet material, contrary to easily breaking injection molded collets.**
- **The collet numbers are clearly engraved and colored, to avoid mistakes.**



Tip! Use in combination with: Betex induction heaters, page 5, 6

FITTING TOOL SET

BETEX IMPACT 39

By using the impact resistant plastic collets, made of unbreakable sheet material (instead of easily breaking injection moulded collets), metal-to-metal contact is avoided and also damaging of the shaft. The sets can be used for bore diameters of 10 to 60 mm or parts thereof. Impact is also suitable for safe, precise and quick mounting of other machine parts, like bushings, sealing rings, cam wheels and pulleys.

IMPACT 39

- with 39 rings, suitable for ± 600 bearings.

Part No.: TB-FT399900-4

Impact	TB-FT399900-2	TB-FT399900-4
Collet bore mm	10-50	10-60
Collet OD mm	26-110	26-130
Sleeve bore mm	32, 52	18, 32, 52, 62
Hammer	0.7 kg, absorbs shocks and vibrations	
Weight kg	4.8	6.5

Collets are marked clearly in order to avoid mistakes.

Tip! Use in combination with: Betex induction heaters, page 5, 6

SHIMS

Case ABCD

Your advantages:

- You have the right size available for immediate use
- The shims have been smoothed and have no burrs
- Precise machine alignment helps you get the best machine performance
- Stock control is now simpler and easier to verify
- **Now also available in 2 and 3 mm thickness!**

Case E

BETEX SOLID STAINLESS STEEL SHIMS
Pre-cut shims for fast, simple and precise machine alignment.

- Available in 6 difference sizes and 11 thicknesses!
- Packed in sets of 10 shims
- High-quality, non-corroding material
- The shim's thickness is etched on each shim.
- Suitable for re-use
- 9 standard combinations in handy carrying cases

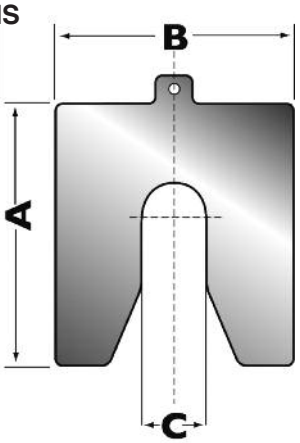
Case ABC

9 STANDARD COMBINATIONS IN HANDY CARRYING CASE (other combinations on request)

Case	ABCD 10/9	ABC 10/9	ABC 10/10	ABC 20/10	AB 10/9	BC 10/9	ABCD 10/10	CD 10/9	E 10/10
Thick-ness	Part No. TB-SHB 020019	Part No. TB-SHB 020110	Part No. TB-SHB 020100	Part No. TB-SHB 020130	Part No. TB-SHB 020210	Part No. TB-SHB 020310	Part No. TB-SHB 020030	Part No. TB-SHB 020410	Part No. TB-SHB 020600
0.05	10	10	10	20	10	10	10	10	10
0.10	10	10	10	20	10	10	10	10	10
0.20	10	10	10	20	10	10	10	10	10
0.25	10	10	10	20	10	10	10	10	10
0.40	10	10	10	20	10	10	10	10	10
0.50	10	10	10	20	10	10	10	10	10
0.70	10	10	10	20	10	10	10	10	10
1.00	10	10	10	20	10	10	10	10	10
2.00	10	10	5	5	10	10	5	10	5
3.00	-	-	5	5	-	-	5	-	5
Total	**360**	**270**	**270**	**510**	**180**	**180**	**360**	**180**	**90**

	Part No.	Pkg.	A mm	B mm	C mm	size mm	bolt size
MINI	TB-SHB035005MN	10	35	30	9	0.05	M8
	TB-SHB035010MP	10	35	30	9	0.10	M8
	TB-SHB035020MR	10	35	30	9	0.20	M8
	TB-SHB035025MS	10	35	30	9	0.25	M8
	TB-SHB035040MT	10	35	30	9	0.40	M8
	TB-SHB035050MU	10	35	30	9	0.50	M8
	TB-SHB035070MV	10	35	30	9	0.70	M8
	TB-SHB035100MW	10	35	30	9	1.00	M8
A	TB-SHB0500025AK	10	50	50	13	0.025	M12
	TB-SHB050005AN	10	50	50	13	0.05	M12
	TB-SHB050010AP	10	50	50	13	0.10	M12
	TB-SHB050020AR	10	50	50	13	0.20	M12
	TB-SHB050025AS	10	50	50	13	0.25	M12
	TB-SHB050040AT	10	50	50	13	0.40	M12
	TB-SHB050050AU	10	50	50	13	0.50	M12
	TB-SHB050070AV	10	50	50	13	0.70	M12
	TB-SHB050100AW	10	50	50	13	1.00	M12
	TB-SHB050200AX	10	50	50	13	2.00	M12
	TB-SHB050300AY	10	50	50	13	3.00	M12
B	TB-SHB0750025BK	10	75	75	21	0.025	M20
	TB-SHB075005BN	10	75	75	21	0.05	M20
	TB-SHB075010BP	10	75	75	21	0.10	M20
	TB-SHB075020BR	10	75	75	21	0.20	M20
	TB-SHB075025BS	10	75	75	21	0.25	M20
	TB-SHB075040BT	10	75	75	21	0.40	M20
	TB-SHB075050BU	10	75	75	21	0.50	M20
	TB-SHB075070BV	10	75	75	21	0.70	M20
	TB-SHB075100BW	10	75	75	21	1.00	M20
	TB-SHB075200BX	10	75	75	21	2.00	M20
	TB-SHB075300BY	10	75	75	21	3.00	M20
C	TB-SHB1000025CK	10	100	100	32	0.025	M30
	TB-SHB100005CN	10	100	100	32	0.05	M30
	TB-SHB100010CP	10	100	100	32	0.10	M30
	TB-SHB100020CR	10	100	100	32	0.20	M30
	TB-SHB100025CS	10	100	100	32	0.25	M30
	TB-SHB100040CT	10	100	100	32	0.40	M30
	TB-SHB100050CU	10	100	100	32	0.50	M30
	TB-SHB100070CV	10	100	100	32	0.70	M30
	TB-SHB100100CW	10	100	100	32	1.00	M30
	TB-SHB100200CX	10	100	100	32	2.00	M30
	TB-SHB100300CY	10	100	100	32	3.00	M30
D	TB-SHB1250025DK	10	125	125	45	0.025	M42
	TB-SHB125005DN	10	125	125	45	0.05	M42
	TB-SHB125010DP	10	125	125	45	0.10	M42
	TB-SHB125020DR	10	125	125	45	0.20	M42
	TB-SHB125025DS	10	125	125	45	0.25	M42
	TB-SHB125040DT	10	125	125	45	0.40	M42
	TB-SHB125050DU	10	125	125	45	0.50	M42
	TB-SHB125070DV	10	125	125	45	0.70	M42
	TB-SHB125100DW	10	125	125	45	1.00	M42
	TB-SHB125200DX	10	125	125	45	2.00	M42
	TB-SHB125300DY	10	125	125	45	3.00	M42

SIZES OF SOLID SHIMS
(AISI 304, DIN 1.4301)

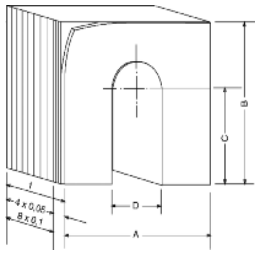


PEEL-OFF (HARD BRASS SHIMS) MS-63

- The peel-off shims are 1 mm thick and are available in 5 sizes. They consist of 12 peel-off layers (8x0.1 mm and 4x0.05 mm).
- They always fit! Simply peel off until the right thickness is obtained.

Sizes of peel-off shims

Part No.	package	size	bolt size
TB-PS8125005	10	35x35mm	M10
TB-PS812502	10	50x50mm	M14
TB-PS8125035	10	75x75mm	M16
TB-PS812504	10	100x100mm	M24
TB-PS8125045	10	125x125mm	M32



	Part No.	Pkg.	A mm	B mm	C mm	size mm	bolt size
E	TB-SHB200005EN	10	200	200	55	0.05	M52
	TB-SHB200010EP	10	200	200	55	0.10	M52
	TB-SHB200020ER	10	200	200	55	0.20	M52
	TB-SHB200025ES	10	200	200	55	0.25	M52
	TB-SHB200040ET	10	200	200	55	0.40	M52
	TB-SHB200050EU	10	200	200	55	0.50	M52
	TB-SHB200070EV	10	200	200	55	0.70	M52
	TB-SHB200100EW	10	200	200	55	1.00	M52
	TB-SHB200200EX	10	200	200	55	2.00	M52
	TB-SHB200300EY	10	200	200	55	3.00	M52

TIP! Use in combination with: Betex jacks page. 74, 75
Betex Spreaders, page. 77
Alignment computer, page. 86-92

SHAFT ALIGNMENT COMPUTERS

FIXTURELASER DIRIGO
The Fixturelaser Dirigo puts laser alignment accuracy within reach of everyone! The ergonomically designed control unit fits comfortably in one hand. The live display means that you will get instant feedback when shimming or moving the machines. This eliminates the guesswork and back and forth you're suffering through now. All this at an affordable price that means a really quick payback.

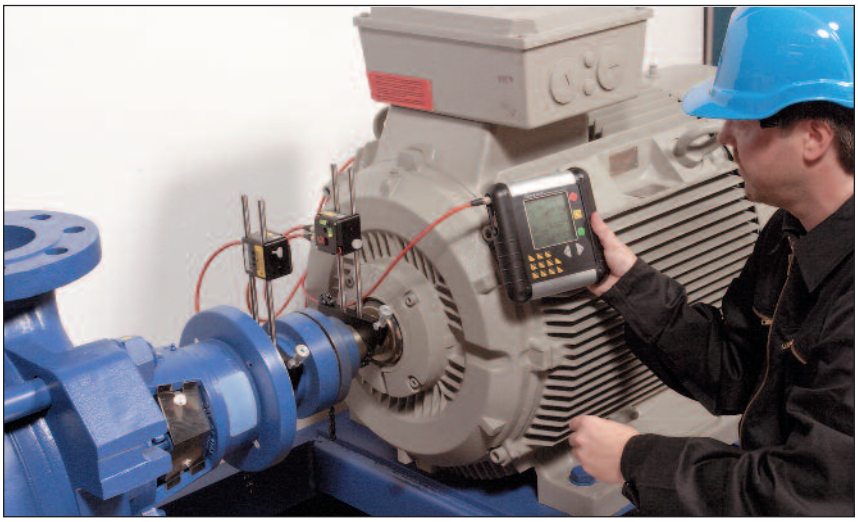
Fast, Easy, Precise
The Fixturelaser Dirigo features an unique "laser line" instead of the traditional laser dot. This makes setup and alignment much easier, as the line is wide and is easily projected to the laser detector.

An easy to use and payable laser align system with push-buttons for the alignment of horizontal mounted machines.
- Horizontal shaft alignment
- Easy-to-use
- Wide laserbeams
- Packaged brackets
- Measuring distance: max. 1 meter

The Fixturelaser is inclusive:
Display unit
2 measuring units with spirit levels
2 mechanical shaft fixtures
2 locking chains
2 extension chains
Measuring tape
Instruction for use
Certificate of calibration
Set of alignment reports
Carrying case

Part No.: TB-SA780600

TIP!
Use in combination with:
Betex jacks, page 74, 80
Betex spreaders, page 77
Betex shims, page 84, 85



EASY-LASER® D450 SHAFT ALIGNMENT EQUIPMENT

Easy-Laser® D450 is a basic system, with the performance and potential for expansion of our more advanced ones, for example D505 and D525. In fact, with the right accessories your D450 system can be converted into any other Easy-Laser® system!

The general idea behind the system is “simplicity for the user”. All parts included in the system are developed for rough use and to be easy to mount on the machines. As a user you are given step-by-step instructions on the display through the entire measurement procedure. Even though the technology inside is rather advanced, the measurement principle is straightforward. It is based on the “reverse indicator method” with two laser/measuring units mounted on each side of the coupling.

System D450 includes two measurement programs: Horizontal shaft alignment and Softfoot*. The displayed measurement resolution can be set as low as 0.05 mils/thou [0.001 mm]. When the measurement is complete you can produce a printout, save in the display unit or transfer the data to your PC.

Why the D450

- Alignment can now be done by one person
- The simplicity of the design makes training unnecessary
- Laser-technology is faster and more precise than conventional alignment methods
- Shaft alignment for horizontal machines
- Soft Foot specification
- Thermal growth
- Tolerance check, geographic display showing whether alignment falls within tolerances.
- Measurement value filter Electronic filter system for accurate measurement results in poor conditions, such as air turbulence and vibration.

Part No. TB-SA780321

A complete system contains:
1 Display unit D279 (with 2 measurement programs)
1 Protective case
2 Cables with Push/Pull connectors
2 Measuring units (S, M)
2 Sets of rods for measuring units (4x2.36”, 8x4.72”[4x60mm, 8x120mm])
2 Shaft brackets with chains
2 Extension chains
1 Measuring tape
1 Manual
1 EasyLink™ Windows® program + PC cable
Delivered in robust aluminum framed carrying case with contoured foam insert.

TIP!
Use in combination with:
Betex jacks, page 74, 80
Betex spreaders, page 77
Betex shims, page 84, 85

EASY-LASER® D480 SHAFT ALIGNMENT EQUIPMENT

Every part of the Easy-Laser® systems is designed to withstand the most demanding environments and to be easy-to-operate when doing the measurements. The versatile design tackles all types of measurement quickly and accurately. You can measure all types of rotating machines with a measurement distance of up to 10 meters [33 feet].
With this system you can align all types of rotating machines: horizontally mounted, vertically/flange mounted, cardan-shaft-coupled machines* and machine trains (up to ten machines in line).
The EasyTurn™ function makes alignment possible with as little as 40° rotation of the shafts. Good when connections, motor guards etc prevent greater rotation. In addition, you can start measurement anywhere on the revolution.
The system has functions for compensation of thermal growth, tolerance check and reference foot locking. You can also check straightness and twist on the machine base. Last but not least, it is possible to perform vibration measurements and digital sheave/pulley alignment using easy to connect accessories.
This makes Easy-Laser® D480 one of the market's most comprehensive measurement systems. A system for alignment professionals.
* Requires accessory

All in all, Easy-Laser® provides you with many opportunities for measuring and alignment:

Part No. TB-SA780325

- SHAFT ALIGNMENT
- SHEAVE / PULLEY ALIGNMENT
- VIBRATION MEASUREMENT
- TWIST MEASUREMENT OF FOUNDATIONS
- STRAIGHTNESS MEASUREMENT

Using a single instrument, you have the potential to troubleshoot and prevent wear and breakdowns in your machines. Easy-Laser® offers what is probably the most competent and cost-effective measuring system for rotating machines on the market!

A complete system contains:
1 Display unit D279 (with 14 measurement programs)
1 Protective case
2 Cables with Push/Pull connectors
2 Measuring units (S, M)
2 Sets of rods for measuring units
2 Shaft brackets with chains
2 Extension chains
1 Measuring tape
1 Manual
1 EasyLink™ Windows® program + PC cable
1 Carrying case

TIP!
Use in combination with:
Betex jacks, page 74, 80
Betex spreaders, page 77
Betex shims, page 84, 85

Part No. TB-SA780319

EASY-LASER® D505 SHAFT ALIGNMENT EQUIPMENT
With this system you can align all types of rotating machines: horizontally mounted, vertically/flange mounted, cardan-shaft-coupled machines* and machine trains (up to ten machines in line).
The EasyTurn™ function makes alignment possible with as little as 40° rotation of the shafts. Good when connections, motor guards etc prevent greater rotation. In addition, you can start measurement anywhere on the revolution.
The system has functions for compensation of thermal growth, tolerance check and reference foot locking.
You can also check straightness and twist on the machine base. Last but not least, it is possible to perform vibration measurements and digital sheave/pulley alignment using easy to connect accessories. This makes Easy-Laser® D505 one of the market's most comprehensive measurement systems. A system for alignment professionals.
* Requires accessory

Why the D505
- Horizontal and vertical alignment
- Alignment of cardan shaft
- 14 programs for all types of rotating machines
- EasyTurn™ 40° function
- Measurements with 1 or 2 shaft detectors
- Soft Foot specification
- Thermal growth compensation
- Tolerance check
- Feet Lock
- The simplicity of the design makes training unnecessary
- Alignment can now be done by one person
- Laser-technology is faster and more precise than conventional alignment methods
- Expandable

A complete system contains:
1 Display unit D279 (14 programs)
2 Cables with Push/Pull connectors
2 Measuring units (S, M)
2 Sets of rods (4x60 mm, 8x120 mm [4x2.36", 8x4.72"])
2 Shaft brackets with chains
2 Extension chains
2 Offset brackets
2 Magnet bases
1 Manual
1 Measuring tape
1 Protective case for the display unit
1 EasyLink™ Windows® program + PC cable and USB converter

Delivered in robust aluminum framed carrying case with contoured foam insert.

TIP!
Use in combination with:
Betex jacks, page 74, 80
Betex spreaders, page 77
Betex shims, page 84, 85

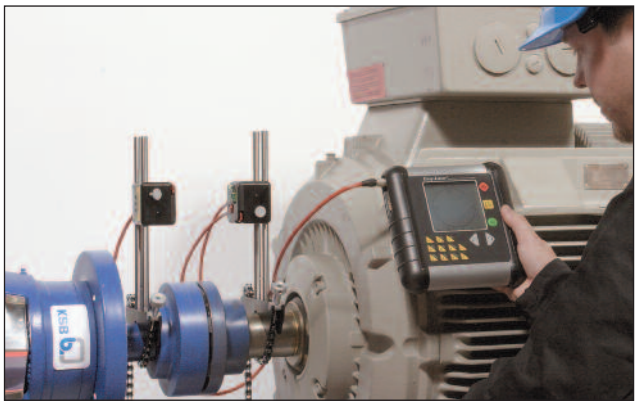
Part No. TB-SA780316

EASY-LASER® D525 SHAFT ALIGNMENT EQUIPMENT
This is our most flexible shaft system, with all programs and functions for the alignment of rotating machines included in system D505, as well as all programs for geometric measurements. You only need add the geometric accessories you need. This system is common as a base for professional maintenance companies that must be able to solve all types of measurements and alignments. If you mainly carry out shaft alignment, but wish to perform geometric measurements now or in the future, this is also the right system for you. For example, you can check straightness and twist on the machine base, and perform vibration measurements* and digital sheave/pulley alignment*.

Typical applications for this system are horizontally, vertically/flange mounted and cardan-shaft-coupled machines*, machine trains (up to ten machines in line) as well as BTA Digital and geometric measurements when suitable measuring accessories from these systems are used.
*Requires accessory

A complete system contains:
1 Display unit D279 (27 programs)
2 Measuring units (S, M)
12 Rods for measuring units (8x120 mm, 4x60 mm)
2 Shaft brackets with chains
2 Extension chains
2 Offset brackets
2 Magnet bases
2 Cables with Push/Pull connectors (2x2 m)
1 Manual
1 Measuring tape
1 Protective case for display unit
1 EasyLink™ Windows® program and PC cable
1 Carrying case

Characteristics and functions:
- 14 programs for all types of rotating machines
- 13 programs for geometric applications
- EasyTurn™ function
- Thermal growth compensation
- Tolerance check
- Extremely long operating time (up to 48 hours)
- Documentation possibilities
- Expandable
- 2 year warranty



TIP!
Use in combination with: Betex jacks, page 74, 80
Betex spreaders, page 77, Betex shims, page 84, 85

PULLEY ALIGNMENT COMPUTERS

BTA EX EASY-LASER® D90 PULLEY ALIGNMENT LASER

Why the Easy-Laser® BTA models?

- The BTA fits all types of chain and belt drives
- Not only V-belts, but also flat and toothed belts
- Shows both angular and parallel errors together
- Can be used on both horizontally and vertically mounted machines
- Pulley alignment can now be done by one person
- The simplicity of the design makes training unnecessary
- Laser-technology is faster and more precise than conventional alignment methods
- Now also available in Atex/EX version (D130)

Specifications:

Dimensions (B x D x H)	: 145 x 86 x 30 mm
Material	: ABS plastic
Weight	: 270 grams
Sheave diameters	: 60 mm diameter and larger
Operating range	: maximum 10 meters

Part No. TB-PA7803103

BTA EASY-LASER® D130 ATEX/EX

Bega has been supplying laser-optic aligning equipment for shaft alignment and geometric measurement since the early nineties. Recently, Bega has added the BTA Easy-Laser® Compact to its range.

- The BTA fits all types of chain and belt drives
- Not only V-belts, but also flat and toothed belts
- Intrinsically safe and approved for use in potentially explosive environments.
- Shows both angular and parallel misalignment between the sheaves
- Can be used on both horizontally and vertically mounted machines
- Pulley alignment can be made by one operator
- Laser-technology is faster and more precise than conventional alignment methods

Specifications:

Dimensions (W x D x H)	: 145 x 86 x 30 mm
Material	: ABS plastic
Weight	: 270 grams
Sheave diameters	: 60 mm diameter and larger
Operating range	: maximum 10 meters

Part No. TB-PA7803130

BTA EASY-LASER® D160 DIGITAL

BTA Digital Easy-Laser® D160 pulley alignment laser

Transmitter dimensions (W x D x H)	: 145 x 86 x 30 mm - 270 grams
Receiver dimensions (W x D x H)	: 95 x 95 x 35 mm - 170 grams
Display dimensions (W x D x H)	: 78 x 120 x 23 mm - 170 grams
Material	: ABS plastic / anodized aluminum
Sheave diameters	: 60 mm diameter and larger
Operating range	: maximum 3 meters digital (10 meters with targets)

Parallel and angular errors between the sheaves are given with digital precision on the receiver.

The laser is supplied complete with:
Separate backlit display
1 measuring cable, length 2 meters, with push/pull connectors
2 magnetic targets, adjustable from -4 to +4 mm
2 AA 1.5V Penlight and 9V Block batteries (1 reserve set)
Plastic case with foam insert and manual

Part No. TB-PA7803160

TIP!
Use in combination with:
Betex jacks, page 74, 80
Betex spreaders, page 77
Betex shims, page 84, 85

PULLEY ALIGNMENT COMPUTERS

PAT PULLEY ALIGNMENT LASER
The PAT pulley alignment laser is the definitive solution for all your pulley alignment jobs!

Because the belts' grooves are used as reference points, you can see instantly whether the pulleys are correctly aligned or not.
The PAT is supplied with two spring-loaded laser units that can be mounted in the pulley grooves.
The PAT also has standard tapers allowing the lasers to be mounted on most standard gauges. (A-E 6 mm - 40 mm) Other gauges are available as accessories.

The use of two laser units makes it very easy for the user to determine the adjustment required, e.g. whether to correct a parallel error or an angular error.

You can see in no time whether your pulleys are correctly aligned. Alignment is just as easy as mounting the laser units. Simply switch on the lasers and view the laser unit on the other pulley.
The laser projects a line on the upper surface of the opposing laser unit, mounted on the 'target' as shown to the left. If required, the machine can be aligned in such a way that the laser on both units hits the 'target'.

Part No. TB-PA780700

Specifications:

Material	: anodized aluminum
Dimensions	: 61 x 76 x 60 mm (L x H x W)
Weight	: 0.64 kg
Battery type	: (2) AAA batteries
Operating range	: from 15.2 mm till 609.6 mm
Laser	: class 2
Pulley diameters	: 76 mm and bigger

TIP!
Use in combination with:
Betex jacks, page 74, 80
Betex spreaders, page 77
Betex shims, page 84, 85